

REVIEW

by Prof. Dr. BORIS TODOROV KOLEV,

appointed a member of the Scientific Jury by Order № 01-266 / 29.12.20200 of the Director of National Institute of Geophysics, Geodesy, and Geography at BAS

Re: The teaching practice, the scientific publications and the scientific-organizational activity of Assoc. Prof. Dr. BOIAN YORDANOV KOULOV, participant in a competition, announced by NIGGG-BAS in SG, issue 93 of 30.10.2020 for holding the academic position "PROFESSOR" in the field of higher education 4. Natural sciences, mathematics and informatics, Professional field 4.4. Earth Sciences (Economic and Social Geography) for the needs of the Department of Geography at NIGGG – BAS

The only participant in the announced competition is Assoc. Prof. Dr. Boian Yordanov Koulov from the Section "Economic and Social Geography" in the Department of "Geography" at NIGGG - BAS.

I. Biographical data and professional development

Assoc. Prof. Dr. Boian Yordanov Koulov was born on September 8, 1957 in the city of Plovdiv. In 1983 he graduated from GGF at Sofia University "St. Kl. Ohridski" in the specialty "Geography of Tourism" and acquired the degree "Masters". From 1984 to 1987 he was a doctoral student at the Geographical Institute of the Bulgarian Academy of Sciences and after successful defense he was awarded the scientific degree "Candidate of Geographical Sciences" (equivalent to "Doctor of Geography"). From October 2007 to 01.01.2008 he started working at the Geographical Institute of BAS as a "geographer". In 2008 he was elected "Senior Research Fellow II degree" (associate professor) at the same institute and at the same time held the position of Scientific Secretary of the institute. During the period 2010 - 2014 he was Scientific Secretary of the National Institute of Geophysics, Geodesy and Geography - BAS.

The participant in the competition has computer skills in the application programs: Excel, Microsoft Word, Power Point.

II. Teaching practice

Assoc. Prof. Boian Koulov has a rich teaching practice mainly in the USA. During the period "February - August 1990" he started working as a "guest researcher" at the University of West Virginia in Morgantown (West Virginia), after which until May 1991 he was hired as an "assistant professor" at the same university. From May 1991 to 1998, he was an "assistant professor" at the American University in Washington, DC. From August 1998 to August 2000, he worked as a "visiting professor" at George Mason University in Fairfax, Virginia, USA. From 2000 to 2007, he became an "Assistant Professor" at George Washington University in the US capital. He was also a teacher at St. Andrews High School in Potomac, Maryland.

Assoc. Prof. Koulov has also been invited as a "guest lecturer" at Masaryk University in Brno (Czech Republic), the University of Salzburg (Austria), the Institute of Marine Research in Constanta (Romania), the University of Thessaloniki, the State Universities of Pennsylvania and Indiana (USA), as well as the World Federalist Association and the United Nations Association in Washington and the Institute of International Affairs of the United States Department of State. He also taught at Sofia University "St. Kl. Ohridski". His qualification allowed him to give lectures in a wide range of geographical disciplines, such as political geography, regional development, problems of globalization,

major world problems, geography of the USSR and the former Soviet republics, environmental issues, sustainable development and others.

III. Scientific publications

The participant in the competition participated with 19 scientific publications after his election as "associate professor" (6 independent, 4, in which he is a second author, and, in the rest, he is a part of the teams. This is an important sign that he can work successfully in research teams. Eleven publications are in English, the rest - in Bulgarian. The publications submitted for this review are in the following sections:

- **Monographs** - 1 (Koulov, B. 2020. Europe's core-periphery relations and horizontal disparities, "Az-buki" National Publishing House, Sofia, ISBN 978-619-7065-30-5).
- **Articles** - 9, of which 4 have been published abroad: Romania, Turkey, Austria, and the Netherlands. Three of the articles are the independent work of the candidate, and the rest are collective.
- **Papers presented at scientific forums published in proceedings of national and international conferences** – 8, including four (D7.1, D.7.2, D7.3 and D7.4) which are indexed in Scopus and/or WoS.

IV. Thematic structure of the publications

- Problems of the relations "core" - periphery "and horizontal (territorial) inequalities, manifested in modern Europe - publication B3.1; In fact, the author has analyzed not only the horizontal but also the functional imbalances that he has identified, although he has not mentioned them in the title of his work.

Assoc. Prof. B. Koulov structured his monographic study as follows: Introduction, three chapters (1. The European socio-economic core: geospatial contraction; 2. Expansion of the European periphery; 3. Deep European periphery; Conclusions). The Introduction presents the goals and objectives of the research, as well as the methodological approach used, with the relevant accepted threshold criteria. The author's analyses are made on four territorial levels - from NUTS 0 to NUTS 3 according to the Eurostat classification. Chapter 1 provides an in-depth analysis of the main features of the European socio-economic core, originally composed of the six founding countries of the Common Market in 1957, as well as other neighboring countries that grew into the European Union after several enlargements. Very accurately and figuratively, the author has likened the nucleus to a radiating source of strong economic gravity, paying special attention to its constantly pulsating nature. This established gravity gradually decreases from the nucleus to the periphery, but retains a certain intensity and strength.

The second chapter of the monograph is devoted to analysis of the main horizontal (territorial) and geoeconomic disproportions, in comparison with the core established and proved by the author. These analyses are based on rich sources of statistical, economic and financial material and the corresponding illustrative synthetic indicators, such as GDP and many others. Special attention is paid to the fact that the peripheral parts of the European Union, as well as to the whole European continent, are expanding with varying intensity, due to the inclusion of new member states.

In Chapter Three, based on the analyzed rich information, Assoc. Prof. B. Koulov has divided the territories falling into the category "periphery" into three sub-categories - "upper", "middle" and "deep", as they have significant differences with each other and with respect to the core. These sub-categories territorially flow from the "upper" through the "middle" to the "deep" periphery. Taking into account these differences, the author fairly and reasonably proves that the most difficult and slow

to solve are the problems of socio-economic development of those parts that he has defined as "deep periphery", i.e. territorially (geographically) furthest from the gravitational core. An analysis has also been made of their condition, stemming mainly from problems inherited from the past. It is stated that this is especially true for the countries of Eastern and Southeastern Europe, which are characterized by central planning and state economy until a few decades ago.

Assoc. Prof. B. Koulov's monograph is one of the few scientific publications, not only in Bulgaria but also in Europe, which expand the heuristic view and horizon regarding the modern territorial and geoeconomic mosaic structure of the continent and especially the EU, which I highlight and evaluate as an especially significant contribution.

- Implementation of the concept of ecosystem services and geoinformation technologies for achieving sustainable development - publications G7.1; D7.2; D7.2; D7.6; D8.3;

These publications analyze the main aspects of both the ecosystem services offered by the natural potential, especially in the mountainous regions of Bulgaria (G7.1; D7.4; D7.5; D7.6; D8.3) and the more efficient regional policy in them. The issues regarding the economic valorization of these types of services are also analyzed.

- Surveys of mountainous areas - publications D.7.2; D7.3; D7.5; D7.6; D8.4; D8.9. They highlight in-depth analyzes, not only in relation to the valuation of their potentials and related ecosystem services, but it is stated that their use must be carried out together with their protection and sustainable development.

- Research related to the study, assessment and management of risk processes - publications D8.5; D8.7; D8.10.

V. Achieved results and contributions by groups of publications

They can be divided into two main groups:

V.1. Geospatial inequalities and sustainable regional development, theory, tools and policies.

V.1.1. Here I especially highlight the monographic publication (Koulov, B. 2020. Europe's core-periphery relations and horizontal disparities, "Az-buki" National Publishing House, Sofia, ISBN 978-619-7065-30-5). It includes original research on the spatial (horizontal) differences in the geoeconomic development of Europe and especially the EU. Assoc. Prof. Koulov offers his own view related to the objectively existing and manifesting horizontal (geographical) disproportions related to the pulsations of the gravitational influence of the "core" of the continent and the EU, on the one hand, and the surrounding "periphery", on the other. In his analyzes, he distinguishes three sub-categories of periphery - "upper", "middle" and "deep". These views could be used by diplomats, regionalists and other professionals, both in the future formulation of priority goals and objectives for the territorial development of the continent and within the EU. In this sense, it is a novelty for the scientific geographical literature and enriches it to a considerable extent. Here I must note that the potential, analyzes and conclusions contained in his book are used in his rich teaching practice in the country and abroad.

V.1.2. Identification and mapping of the boundaries of the geospatial core and periphery of the European socio-economic system and their dynamics for the period 2007 - 2017

The contestant has rightfully focused his research on identifying one of the main development problems, especially in the EU. He drew attention to their deepening, especially after the accession of 13 new member states after 2004. Assoc. Prof. B. Koulov found that these countries, distinguished by much lower socio-economic levels compared to the core, have deepened already existing EU regional differences. Through cartographic methods, he determines the territorial scope of both the core and the surrounding periphery.

V.1.3. Classification of geospatial elements of EU regions.

Assoc. Prof. B. Koulov has created a geospatial classification model of these elements, according to the achieved levels of living standards and has revealed their geospatial structures, as well as their transformational pulsations, expressed through expansion and contraction. He also introduces the concept of "super core", composed of the countries with the highest level of socio-economic development, which have the greatest potential for growth. Some problematic disparities in their development is also indicated, especially in the countries of the macro-region "Southeast Europe" - falling under the category of "deep periphery" of the EU.

V.2. Application of the concept of ecosystem services and geoinformation technologies for sustainable environmental management and regional development.

V.2.1. Applied methodological framework of MAES in the administrative-territorial units in Bulgaria.
On this basis, methodological guidelines for mapping and economic assessment of ecosystem services at the municipal level are proposed. These guidelines have been applied in specific Bulgarian municipalities such as Karlovo, Chepelare and others.

V.2.2. A substantiated proposal was made for the introduction of the concept of "dysergy" in ecosystem services, through which to improve their assessment (valuation).

This negative phenomenon is common. To overcome or at least reduce it, recommendations are proposed to improve the use of these services in order to support regional policy implementation.

V.2.3. GIS approaches and cartographic products are proposed in order to reduce and / or overcome the risk of occurrence of dangerous natural and man-made phenomena and processes.

Suggestions have been made, as well as a GIS model of the most important functions for reducing or avoiding the occurrence of certain risk events. This is especially important because these events and processes have a stochastic nature of manifestation.

VI. Established citations of works of Assoc. Prof. Dr. B. Koulov

Twenty-eight citations in Bulgarian and foreign scientific publications have been established.

VII. Participation in the development of scientific projects

The scientific preparation and competence of the participant in the competition was assessed through his participation as a leader of 8 scientific projects, 3 of which are under operational programs of the European Union.

VIII. Critical remarks and recommendations

- In his further work, the participant in the announced competition must specify more clearly the achieved research results;
- To focus on publishing more independent works;

- For a higher degree of reliability in his research, it would be useful to use quantitative mathematical and statistical methods and appropriate modeling;
- I recommend Assoc. Prof. B. Koulov to present, if this has not already been done, his monograph in the Committee of the Regions of the EU, as well as before the Council of Europe;
- It would be useful to issue a version in Bulgarian, through which the national scientific community to get acquainted with its analyzes and recommendations contained in the book.

All normative requirements for the competition procedure, according to ZRASRB and the Regulations of NIGGG - BAS, are met. No cases of plagiarism and borrowing from foreign scientific publications have been identified. The participant in the competition meets the necessary requirements, provided in the Law for the academic position of "professor".

Conclusion:

These notes are in the nature of recommendations. They do not belittle or call into question the results achieved and the outstanding contributions that I accept. Assoc. Prof. Dr. Boian Yordanov Koulov is a scientist and lecturer with a clearly defined research profile in the field of economic and social geography. The participant in the competition has the necessary experience, interests and developed scientific competence in various fields of economic and social geography. I am convinced that colleagues from other universities could also use his experience and especially his teaching practice. With all this in mind, I would like to make the following suggestion:

The distinguished members of the Scientific Jury to vote on a proposal to the Scientific Council of the National Institute of Geophysics, Geodesy and Geography - BAS, to take a decision with which Assoc. Prof. Dr. Boian Yordanov Koulov to take the academic position "PROFESSOR" in higher education area 4. Natural sciences, mathematics and computer science; Professional field 4.4. Earth Sciences (Economic and Social Geography).

January 17, 2021

SOFIA

REVIEWER:

(Prof. Dr. Boris Kolev)

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